Australian Government

AURKTAX04 Inspect, service and repair spraying and spreading equipment

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Release: 1

AURKTAX04 Inspect, service and repair spraying and spreading equipment

Modification History

Release	Comments
1	This unit of competency was first released in AUR Automotive Retail, Service and Repair Training Package Release 11.0.

Application

This unit describes the performance outcomes required to inspect, service and repair faults in spraying and spreading equipment. It involves preparing for the task, inspecting the equipment to determine the service and repair requirements, carrying out the service and repair, performing post-repair testing, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry, including the agricultural machinery sector. The spraying and spreading equipment is that of agricultural machinery and refers to specialised self-propelled, trailed and three-point linkage equipment, with controls for pressure, volume and coverage. It does not cover generalised equipment or systems that form the platform or the towing vehicle.

Licensing/Regulatory Information

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite unit(s)

No pre-requisite units

Competency field(s)

Mechanical - Mobile Plant

Unit sector(s)

Technical

Elements and Performance Criteria

Elements	Performance Criteria

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Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.*
1. Prepare to inspect spraying and spreading equipment	1.1 Identify job requirements from workplace instructions 1.2 Identify required information for inspection activity 1.3 Analyse inspection options and select those most appropriate to the circumstances using workplace and manufacturer procedures 1.4 Identify hazards and environmental issues, assess potential risks and implement control measures in line with workplace policies and procedures 1.5 Identify tools and equipment required for inspection activity and establish serviceability according to workplace procedures
2. Conduct inspection and analyse results	2.1 Isolate and stabilise equipment, apply lockout and tagout (LOTO) according to workplace and manufacturer procedures 2.2 Conduct inspection according to workplace procedures, manufacturer specifications, and ***safety and environmental requirements*** 2.3 Compare inspection results with manufacturer specifications 2.4 Document and report inspection findings and recommendations for necessary repairs according to workplace procedures
3. Service and repair spraying and spreading equipment	3.1 Identify required information for service and repair activity 3.2 Identify tools, equipment and materials required for service and repair activity and establish serviceability according to workplace procedures 3.3 Carry out service and adjustments according to manufacturer specifications, workplace procedures, and ***safety and environmental requirements*** 3.4 Carry out repairs, component replacements and adjustments according to manufacturer specifications, workplace procedures, and ***safety and environmental requirements*** 3.5 Carry out post-repair testing according to workplace procedures, and ***safety and environmental requirements***
4. Prepare equipment for operation	4.1 Identify variable operating parameters from manufacturer specifications and by analysing the proposed work environment and conditions

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	4.2 Establish and prepare equipment variables, including management system settings, controls and monitoring systems for proposed operations 4.3 Carry out a test run on equipment and systems and make final adjustments
5. Complete work processes	5.1 Conduct final inspection according to workplace procedures and confirm equipment is ready for use, including checking that protective guards, safety features and cowlings are in place 5.2 Clear work area and dispose of or recycle materials according to workplace procedures 5.3 Check and store tools and equipment according to workplace procedures 5.4 Complete documentation according to workplace procedures

Foundation skills

This section describes the foundation skills essential to performance.

Skills	Description
Learning	• Locates manufacturer and workplace information efficiently
Reading	• Interprets service manuals, specifications, schematics, chemical safety data sheets (SDS) and fault code information for spraying and spreading equipment
Writing	• Records inspection findings, repair recommendations and parts used accurately in workplace documentation
Oral communication	• Clarifies job requirements and reports findings to operators, customers, supervisors and dealer support
Numeracy	• Measures components and calculates tolerances and deviations from manufacturer specifications • Calculates flow rates, pressures and application rates
Planning and organising	• Plans own work requirements • Prioritises actions to achieve required outcomes • Ensures tasks are completed within workplace timeframes
Technology	• Uses specialised diagnostic equipment

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Range of conditions

Safety and environmental requirements must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: o controlling stored energy and pressurised hydraulic systems o working near moving, cutting and crushing components o test runs of operating equipment, including exclusion zones o preventing fires from fuel and hot machinery components • environmental requirements, including procedures for waste and chemical management, machine hygiene, dust and clean-up management.

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Assessment Requirements for AURKTAX04 Inspect, service and repair spraying and spreading equipment

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- inspect, service and repair:
    - one piece of spraying equipment
    - one piece of spreading equipment
- during above work, adjust flow and pressure of delivery system to manufacturer specifications.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- methods to locate and interpret information required to inspect, service and repair spraying and spreading equipment, including:
    - information provided by customers and supervisors
    - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to inspect, service and repair spraying and spreading equipment, including:
    - establishing serviceability of tools and equipment
    - documentation procedures
    - housekeeping procedures, including:
        - storage of tools and equipment
        - identification, tagging and isolation of faulty equipment
        - disposal of excess materials
        - recycling procedures
- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to inspecting, servicing and repairing spraying and spreading equipment, including procedures for:
    - isolating and stabilising equipment, including lockout and tagout (LOTO)
    - controlling stored energy and pressurised hydraulic systems
    - working near moving, cutting and crushing components
    - working at heights, including safe access to and from elevated machine platforms and use of fall prevention equipment

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- test runs of operating equipment, including exclusion zones
- identifying and controlling hazards in field locations, including overhead powerlines
- fire prevention when working near hot components and crop residue
- controlling exposure to hazardous chemicals and chemical residues on equipment, including agricultural chemical residues in tanks, lines and booms
- selecting and wearing personal protective equipment (PPE), including respiratory protection

- environmental requirements, including procedures for:
  - trapping, storing and disposing of oils, fuels and fluids released during work
  - containing and cleaning up oil, fuel and hydraulic fluid spills, including during field repairs
  - preventing chemical contamination of soil and waterways
  - machine hygiene, including removing soil, seed and plant material to prevent the spread of weeds and disease
  - dust and clean-up management
- operating principles of spraying and spreading equipment, including:
  - pumps, pressure and flow
  - drive systems
- purpose and operation of spraying and spreading equipment, including:
  - spraying equipment for distributing liquid pesticides, herbicides and fertilisers, including:
    - pumping, rate and section control systems, including flow meters, electric control valves and pressure relief valves
    - nozzle liquid delivery systems, including differences between conventional and pulse width modulation (PWM) systems
    - mixing system
    - marking and covering system
    - camera-based weed detection systems for green-on-brown and green-on-green spraying
    - automatic boom height control systems, including the function of ground height sensors, machine position sensors and hydraulic control valves
  - spreading equipment for distributing solids and semi-solids, including fertilisers and waste products:
    - distribution, rate and section control
    - delivery system

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        - pumping system
        - material handling and storage
- procedures for flushing chemicals from spraying and spreading equipment prior to inspection, service and repair work
- inspection procedures for spraying and spreading equipment, including:
    - confirming safety guards and systems are in place and operating as designed
    - measuring and analysing component wear and clearances
    - system operation analysis
    - accessing and interpreting fault codes
- service and repair procedures for spraying and spreading equipment, including:
    - removing, replacing and repairing components
    - adjusting pressure, volume and coverage of spraying and spreading equipment
- post-repair testing procedures for spraying and spreading equipment, including:
    - variable operating parameters
    - impact of environmental factors.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- assessment must include direct observation of tasks.
- where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the spraying and spreading equipment that they have serviced and repaired, e.g. repair orders.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer spraying and spreading specifications
- one item of spraying equipment and one item of spreading equipment requiring service and repair
- diagnostic equipment for spraying and spreading equipment
- tools, equipment and personal protective equipment (PPE) appropriate for inspecting, servicing, repairing and adjusting spraying and spreading equipment.

Mandatory Workplace Requirements

Assessment of performance evidence may be in a workplace setting or an environment that accurately represents a real workplace.

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Unit Mapping Information

Previous Code and Title	Equivalence	Comments
AURKTA004 Inspect, service and repair spraying and spreading equipment		Performance criteria and assessment requirements updated. No change to performance outcomes.

Links

Companion volumes, including implementation guides, are found on the national training register - https://training.gov.au/training/details/AUR.

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